

REMARKS

Claims 1-20 are pending in the application. Claims 1-20 have been rejected. Claims 1-12, 14, 15, and 17-20 have been amended. Claim 13 has been canceled. New claims 21-32 have been added.

Allowable Subject Matter

Claim 12 would be allowable if rewritten in independent form to overcome the rejection(s) under 35 U.S.C. § 112, second paragraph, set forth in this Office Action and to include all of the limitations of the base claim and any intervening claims.

Claim 12 has been rewritten accordingly, and is now considered to be in condition for allowance.

Claim Objections

Claims 5, 14 and 18 are objected to as including informalities.

Claims 5, 14 and 18 have been amended to correct the informalities according to the Examiner's suggested changes.

Claim Rejections - 35 U.S.C. § 112

Claims 1-16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While applicant does not agree with a rejection resulting from usage of the words "configured with" or "configured to" in these claims, independent claims 1 and 10 have been amended to further the application process along.

Claims 11 and 13 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 has been amended to clarify the relationship between the connector, the mounting holes and the circuit board. Applicant believes the amendment overcomes the rejection of claim 11. Claim 13 has been canceled.

Claim Rejections - 35 U.S.C. § 102

Claims 1-4, 6 and 17-19 are rejected under 35 U.S.C. § 102(b) as being anticipated by Aritani (US 2001/003685).

The rejection is respectfully traversed; however, claims 1, 3, 6, and 17-19 have been amended to further clarify the subject matter of the claims in order to facilitate bringing this case into allowance.

Claim 1 discloses a connector, comprising: conductors; and a housing substantially enclosing the conductors and including an opening on a first side other than the front connecting face, and an opening on an opposite second side that together form a passageway extending completely through the connector from the first side to the second side for promoting air flow across the conductors and through the housing.

The housing (Fig. 6, #40) described in Aritani does not substantially enclose the conductors, rather the connectors (Figs. 2 and 6, #20) including the conductors are clearly shown as being mounted on the housing. Furthermore, the elements identified as openings (Fig. 5, #27) do not allow air flow through the housing from a first side to a second opposite side, as the openings in Aritani merely expose a plate (Fig. 5, # 25) having a dielectric material (Fig. 3, #24) that is overmolded (page 1, paragraph 0019) on the conductors. Element 3A (Fig. 3) is not referenced in the specification, nor do any of the drawings teach that air flow may flow through element 3A, let alone through the housing. Independent claims 1 and 17 have been further amended to clarify novel features not disclosed in Aritani.

Claim Rejections - 35 U.S.C. § 103

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Aritani as applied to claim 4 above, in view of Konstad (US 6,452,797).

Claim 5 has been amended to clarify that the vias are electrically connected to the circuit board, which is itself distinguishable from Konstad. Furthermore, applicant disagrees that including multiple smaller opening is obvious in order to increase the strength of the circuit board. Rather, the improved ability of the multiple holes to promote airflow and cool the connector is an unexpected result of the disclosure, unrelated to strength of the circuit board.

Claims 7 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Aritani as applied to claim 4 above, in view of Yasufuku et al.

For the reasons previously mentioned, independent claim 1 is distinguishable over Aritani in view of Yasufuku, however claims 7 and 8 have been amended to further clarify the subject matter of the claims in order to facilitate bringing this case into allowance. Specifically, a connector is disclosed including an air intake vent located below the housing, and an exhaust vent configured to vent air in a direction offset and substantially parallel to the air directed towards the intake vent.

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Aritani as applied to claim 4 above, in view of Eberle et al. (US 6,027,535).

Neither Eberle nor any of the other cited art disclose directing air through vias which are electrically connected to a power plane. By directing air flow through the vias, cooling of the contact points between the connector and circuit board is facilitated. This is not mere rearrangement of the parts, but an improved design with improved cooling efficiency.

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasufuku et al. as applied to claim 10, in view of Konstad.

Claim 11 is allowable for the same or similar reasons as claims 5 and 9.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasufuku et al. as applied to claim 11 above, in view of Kuchta et al. (US 6,014,319).

While claim 13 has been canceled, Examiner is requested to notice that a similar limitation has been included in claim 10. Applicant respectfully disagrees that the Kuchta reference teaches the holes (Fig. 8, #810) are electrically coupled to a power plane. There is no indication at the referenced Col. 10, line 46 of an electrical connection to these holes. Instead, other holes such as hole groups 801-807 accommodate a respective pin from a connector (Col. 10, line 57-62). However, these hole groups are not identified as being associated with air flow.

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Aritani as applied to claim 17 above, in view of Le et al. (US 5,680,295).

As per the above, neither Le nor any of the other cited art disclose directing air through vias which are electrically connected to a power plane, and claim 20 is therefore distinguishable.


Any statements made by Examiner that are not addressed by Applicant do not necessarily constitute agreement by the Applicant. In some cases Applicant may have amended independent claims thereby obviating grounds for rejection of dependent claims, for example.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 1-12 and 14-20 and consideration of new claims 21-32 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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